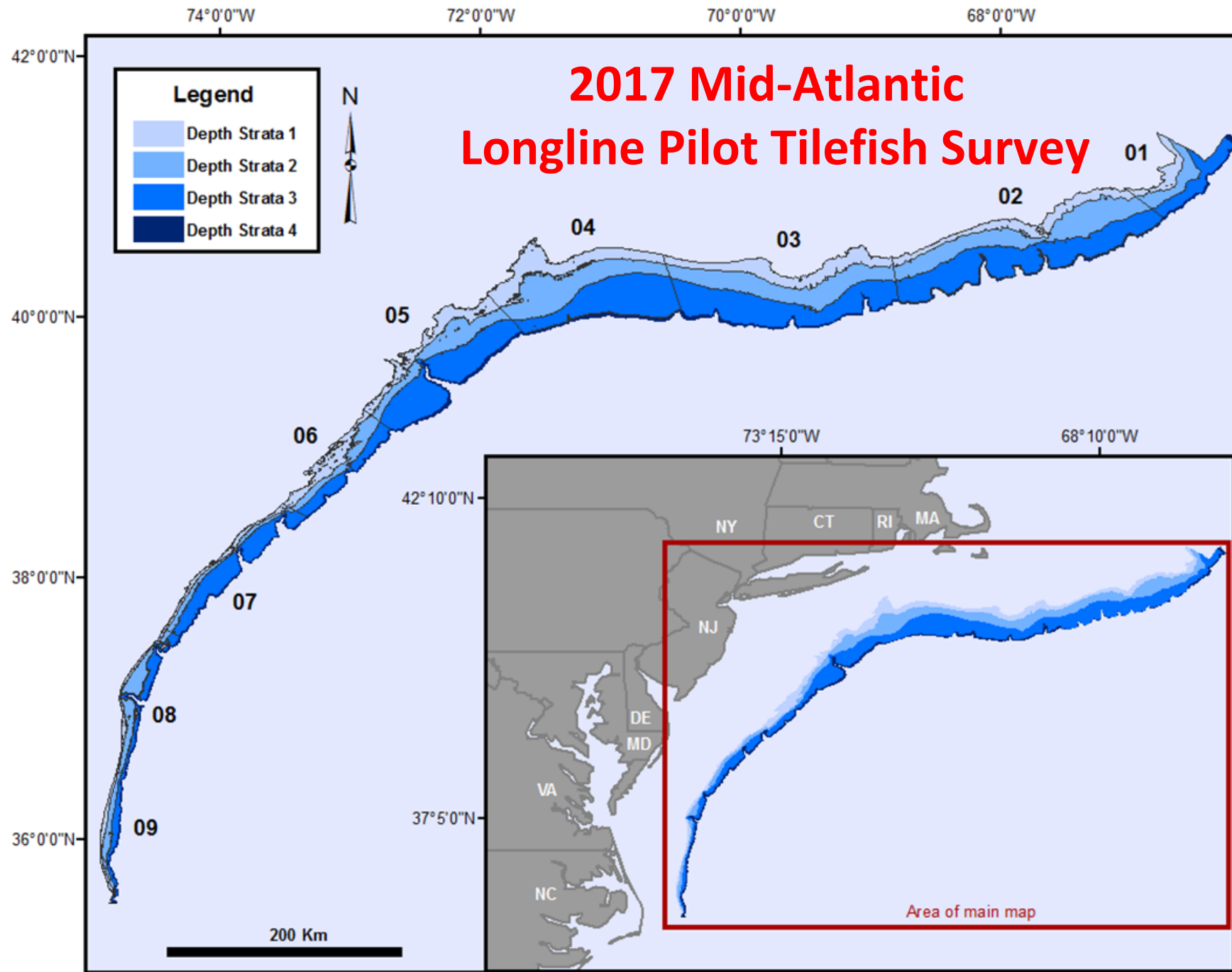


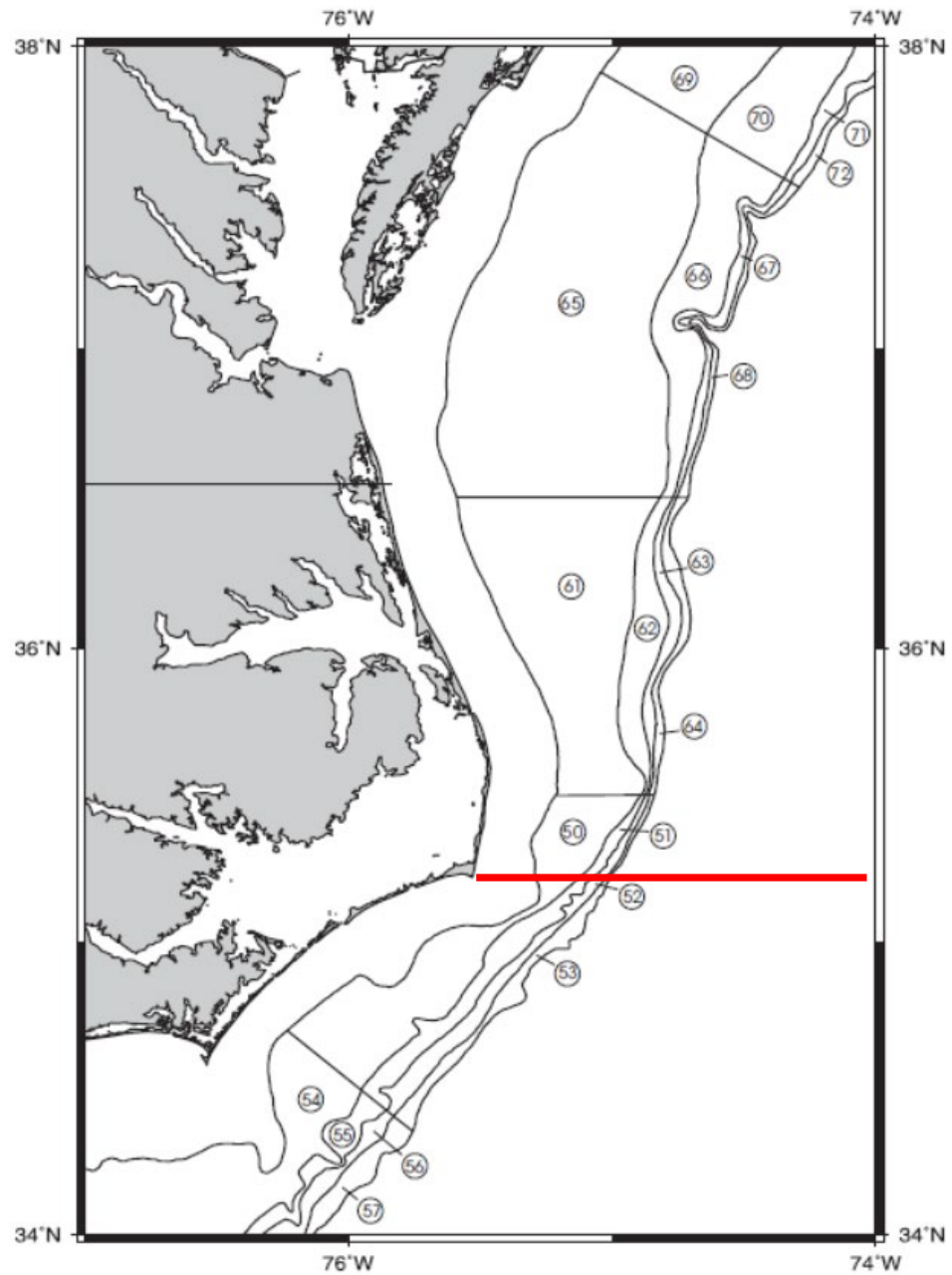


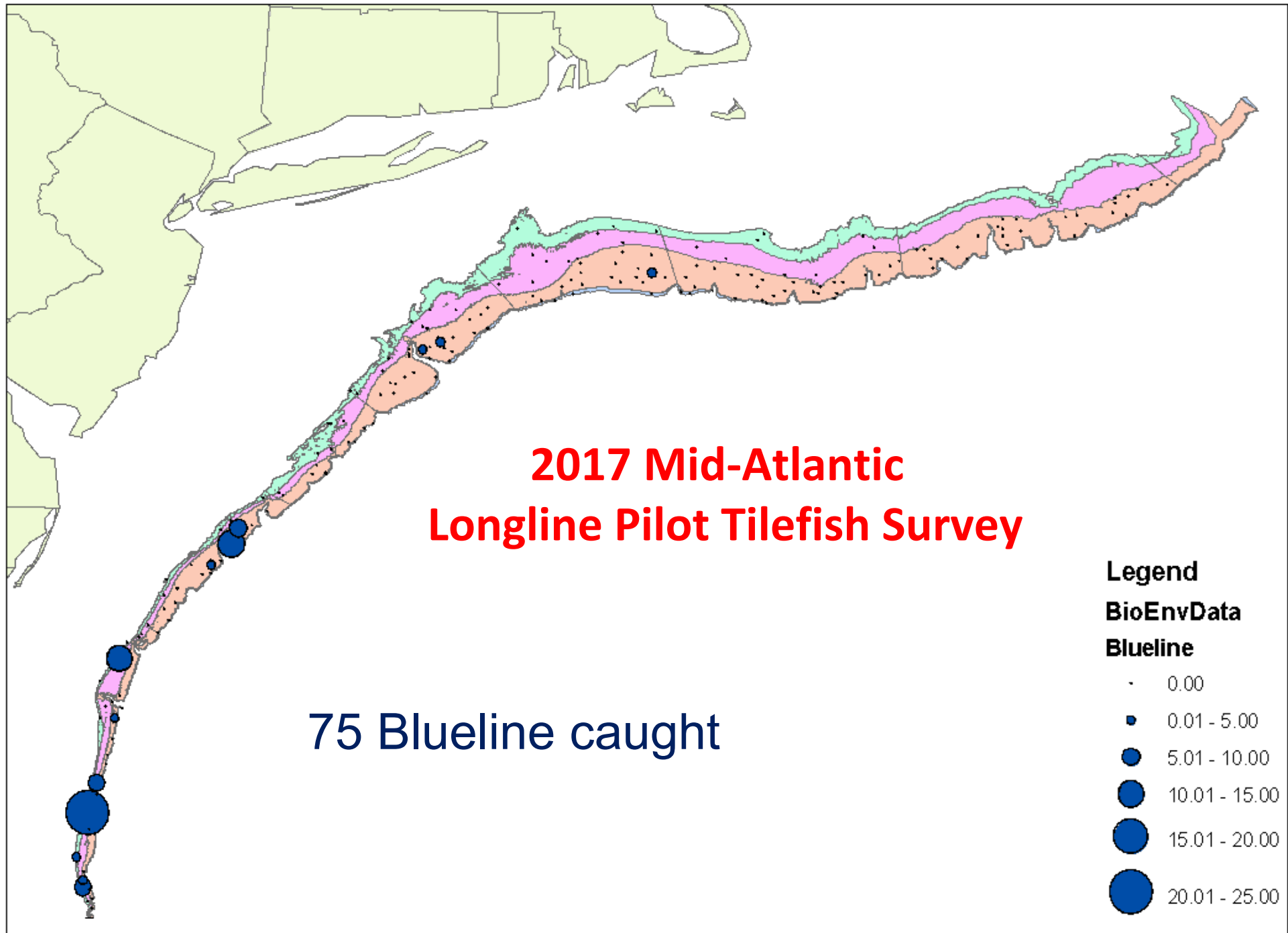
ABC Proportional Estimation (Mid-Atlantic vs. NC/VA line – Hatteras “sliver”) for Blueline Tilefish

Reviewed by Joint Mid-Atlantic and South Atlantic
Joint Sub-Scientific and Statistical Committee
April 23, 2025









Option 1: 2017 Pilot Survey Raw Numbers

Area	Strata Sections	Hauls Number	Hauls Proportion	Area km ²	Area Proportion	Positive Hauls	Positive Proportion	Blueline raw no	Blueline Proportion	Blueline No/haul	Blueline Proportion
MAFMC	4-8	117	0.89	17673	0.95	8	0.07	37	0.49	0.3	0.10
SAFMC	9	14	0.11	907	0.05	5	0.36	38	0.51	2.7	0.90



Option 2: Straight Stratified Proportions

Stratified estimate (strata 4-9) = 0.54 numbers/haul with cv = 0.37

Area	Strata Sections	stratified contribution	stratified proportion	cv
MAFMC	4-8	0.33	0.62	0.55
SAFMC	9	0.20	0.38	0.41

Option 3: +25% area adjustment to 9 Stratified Proportions

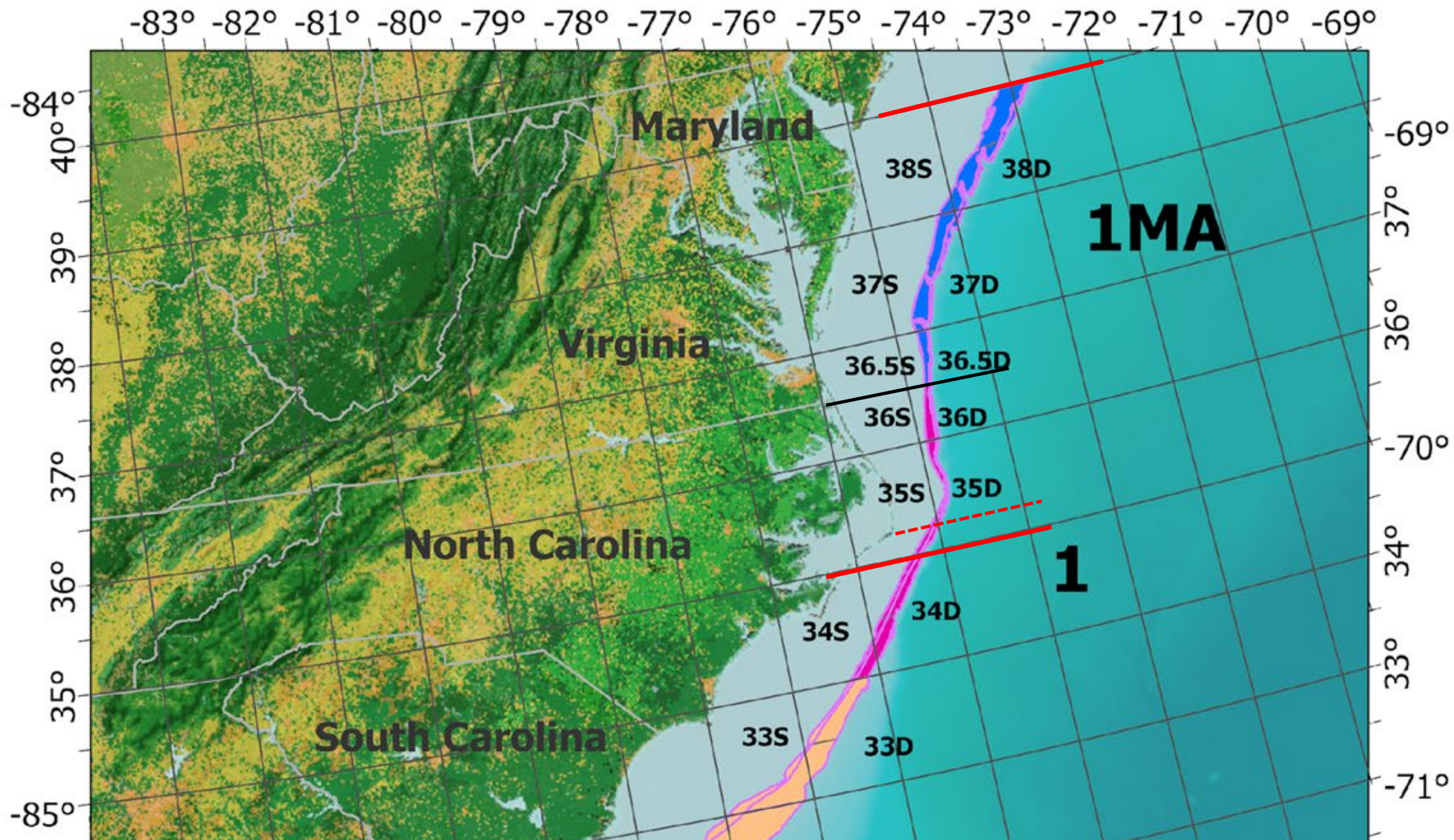
Add 25% more area to the total of Strata 9 and assume the same catch rates

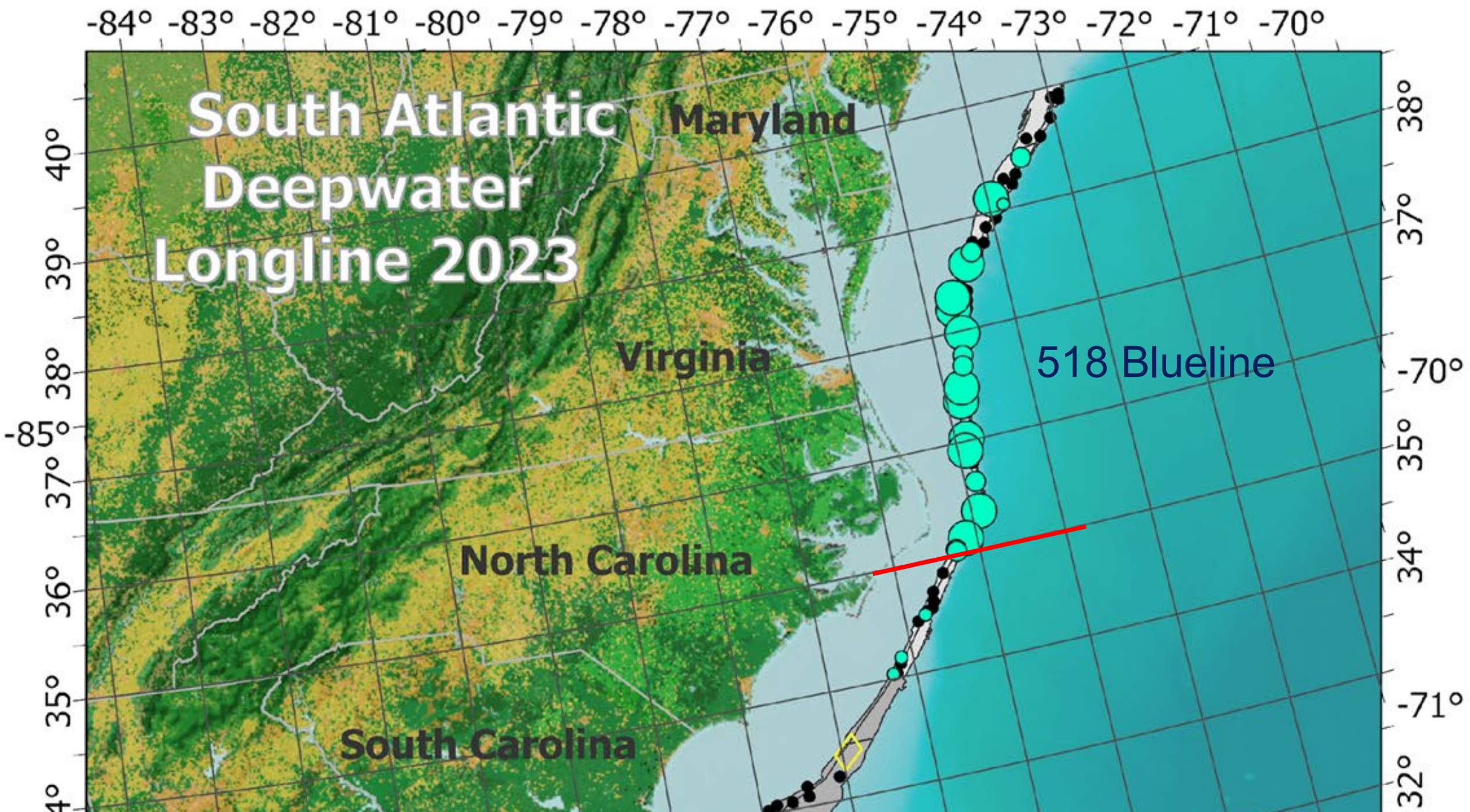
Stratified estimate (strata 4-9) = 0.58 numbers/haul with cv = 0.36

Area	Strata Sections	stratified contribution	stratified proportion	cv
MAFMC	4-8	0.33	0.57	0.55
SAFMC	9	0.26	0.43	0.41

Applied same calculation methods using the 2023 and 2024 SADL Survey







South Atlantic Deepwater Longline 2024

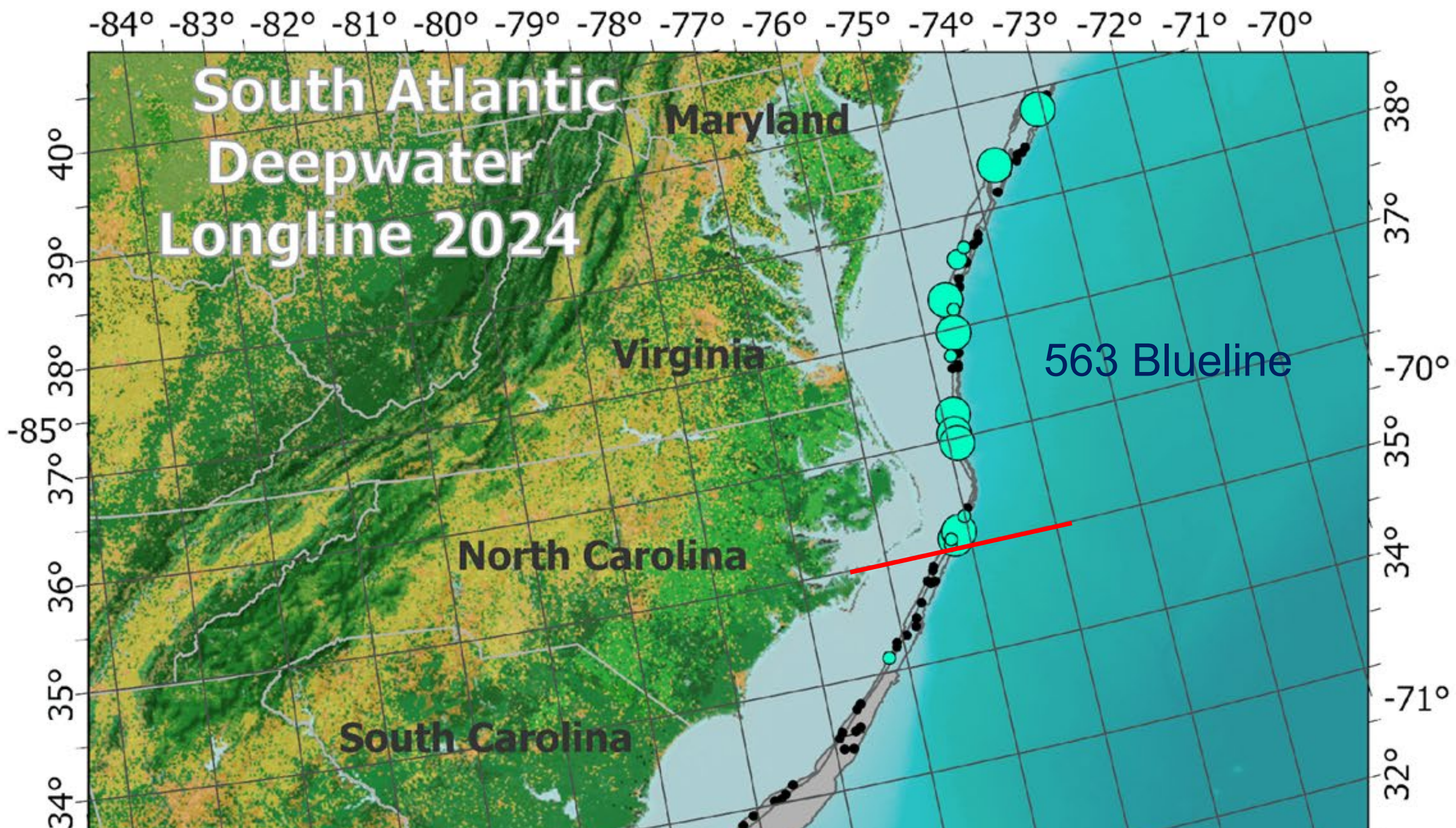
Maryland

Virginia

North Carolina

South Carolina

563 Blueline



2023

Area	Strata Sections	Hauls Number	Hauls Proportion	Area km^2	Area Proportion	Positive Hauls	percent positive	Blueline		Blueline	
								raw No	Proportion	No/haul	Proportion
MAFMC	36.5, 37,38	30	0.61	5542	0.80	10	0.33	275	0.53	9.2	0.42
SAFMC	35, 36	19	0.39	1423	0.20	9	0.47	243	0.47	12.8	0.58
total		49		6964				518		22	

2024

Area	Strata Sections	Hauls Number	Hauls Proportion	Area km^2	Area Proportion	Positive Hauls	percent positive	Blueline		Blueline	
								raw No	Proportion	No/haul	Proportion
MAFMC	36.5, 37,38	30	0.63	5542	0.80	8	0.27	263	0.47	8.8	0.34
SAFMC	35, 36	18	0.38	1423	0.20	8	0.44	300	0.53	16.7	0.66
total		48		6964				563		25	

Calculations (2023 example)

Stratified Sampling Estimates:				stations		mean num	SD num										
Strata	Depth strata	Area (km^2)	Wh (Stratum Weight = Frac. Area)	nh	Wh^2*sh ^2/nh	ybarh (mean catch)	sh (SD catch)		Total Estimate						North Estimate		
38S	Shallow	2492.30	0.358	6	2.13	5.00	10.00		ybarst=	12.76	stratified mean catch				ybarst=	9.52	stratified mean catch
38D	Deep	531.11	0.076	6	0.00	0.17	0.41		vst=	22.97	var of ybarst				vst=	21.25	var of ybarst
37S	Shallow	1501.42	0.216	6	17.87	29.33	48.03		sest=	4.79	standard dev of ybarst (i.e., se)				sest=	4.61	standard dev of ybarst (i.e., se)
37D	Deep	495.02	0.071	6	0.00	0.00	0.00		coef var=	0.38	se/mean				coef var=	0.48	se/mean
36.5S	Shallow	427.62	0.061	3	1.24	22.67	31.47										
36.5D	Deep	94.24	0.014	3	0.00	0.00	0.00										
36S	Shallow	430.54	0.062	3	0.88	22.00	26.21		Region	Strat est	proportion	cv			South Estimate		
36D	Deep	132.21	0.019	4	0.00	0.00	0.00		MAFMC	9.52	0.75	0.48			ybarst=	3.24	stratified mean catch
35S	Shallow	559.58	0.080	7	0.72	17.86	27.99		SAFMC	3.24	0.25	0.40			vst=	1.72	var of ybarst
35D	Deep	300.44	0.043	5	0.12	10.40	18.19		total	12.76					sest=	1.31	standard dev of ybarst (i.e., se)
															coef var=	0.40	se/mean
		Total Area	Total	Total													
		6964.5	1.000	49													

Credit Robert Cerrato

2023 Check (thanks to Chris Legault)
Expanded N = mean numbers per haul x stratum area

Strata	Depth strata	Expanded N Check on calculations		
38S	Shallow	12461.48		
38D	Deep	88.52		
37S	Shallow	44041.59		
37D	Deep	0.00		
36.5S	Shallow	9692.69		
36.5D	Deep	0.00		
36S	Shallow	9471.92		
36D	Deep	0.00		
35S	Shallow	9992.43		
35D	Deep	3124.55		
		Total	MAFMC	SAFMC
		88873.18	66284.3	22588.9
			0.75	0.25

2023 Stratified Estimate
(strata 35-38) = 12.76 numbers/haul with CV = 0.38

Area	Strata Sections	stratified contribution	stratified proportion	cv
MAFMC	36.5, 37,38	9.52	0.75	0.48
SAFMC	35, 36	3.24	0.25	0.40

2024 Stratified Estimate
(strata 35-38) = 13.64 numbers/haul with CV = 0.49

Area	Strata Sections	stratified contribution	stratified proportion	cv
MAFMC	36.5, 37,38	9.25	0.68	0.68
SAFMC	35, 36	4.40	0.32	0.46

2023 & 2024 Combined Stratified Estimate
(strata 35-38) = 13.35 numbers/haul with CV = 0.41

Area	Strata Sections	stratified contribution	stratified proportion	cv
MAFMC	36.5, 37,38	9.38	0.70	0.56
SAFMC	35, 36	3.97	0.30	0.43

A couple of Sensitivities

2023 stratified estimate (strata 35-38)

Area	Strata Sections	stratified contribution	stratified proportion	cv	<u>strata 38 reduction sensitivity</u>			<u>Blueline per hook</u>	
					stratified contribution	stratified proportion	cv	stratified contribution	stratified proportion
MAFMC	36.5, 37,38	9.52	0.75	0.48	11.08	0.72	0.52	0.0216	0.74
SAFMC	35, 36	3.24	0.25	0.40	4.21	0.28	0.40	0.0075	0.26
		12.76		0.38	15.29		0.39	0.0291	

2024 stratified estimate (strata 35-38)

Area	Strata Sections	stratified contribution	stratified proportion	cv	<u>strata 38 reduction sensitivity</u>			<u>Blueline per hook</u>	
					stratified contribution	stratified proportion	cv	stratified contribution	stratified proportion
MAFMC	36.5, 37,38	9.25	0.68	0.68	10.82	0.65	0.75	0.0207	0.73
SAFMC	35, 36	4.40	0.32	0.46	5.71	0.35	0.46	0.0075	0.27
		13.64		0.49			0.52	0.0282	

Questions/Discussion



Photo courtesy: Jimmy Fee